***CLAIM SET AS AMENDED***

1. (Previously Presented) A method of converting, comprising:

receiving m-bit information words, where m is an integer;

converting the m-bit information words into n-bit code words, where n is an integer greater than m,

the n-bit code words being divided into a first type and a second type and into coding states of a first kind and a second kind,

wherein an m-bit information word is converted into an n-bit code word of the first or the second kind if the previous m-bit information word was converted into an n-bit code word of the first type,

an m-bit information word is converted into an n-bit code word of the first kind if the previous m-bit information word was converted into an n-bit code word of the second type,

wherein a minimum number of zeros (d) between consecutive ones in the n-bit code words is one zero, and

wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

2. (Previously Presented) A method of converting, comprising:

receiving m-bit information words, where m is an integer;

converting the m-bit information words into n-bit code words, where n is an integer greater than m,

the n-bit code words being divided into a first type and a second type and into coding states of a first kind and a second kind,

wherein an m-bit information word is converted into an n-bit code word of the first or the second kind if the previous m-bit information word was converted into an n-bit code word of the first type, and

an m-bit information word is converted into an n-bit code word of the first kind if the previous m-bit information word was converted into an n-bit code word of the second type,

wherein the converting step converts the m-bit information words into the n-bit code words that satisfy a dk-constraint, where d indicates a minimum number of zeros between consecutive ones in the n-bit code words, and k indicates a maximum number of zeros between consecutive ones in the n-bit code words,

wherein d=1,

wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

3. (Original) The method of claim 2, wherein m/n is greater than 2/3, and d = 1.

4. (Canceled)

5. (Original) The method of claim 2, wherein the n-bit code words are divided into p coding states of the first kind and q coding states of the second kind, where p and q are integers greater than or equal to 1, and each of the p and q coding states have n-bit code words different from the n-bit code words in the other p and q coding states.

6. (Original) The method of claim 5, wherein m/n is greater than 2/3, d = 1, p = 3 and q = 2.

7. (Original) The method of claim 5, wherein p = 3 and q = 2.

8. (Original) The method of claim 5, wherein p+q equals 5.

9. (Original) The method of claim 5, wherein m/n is greater than 2/3, d = 1, p = 8 and q = 5.

10. (Original) The method of claim 5, wherein p = 8 and q = 5.

11. (Original) The method of claim 5, wherein p+q equals 13.

12. (Original) The method of claim 5, wherein at least one of the n-bit code words in one of the p coding states is associated with p+q of the m-bit information words.

13. (Original) The method of claim 12, wherein at least one of the n-bit code words in one of the q coding states is associated with p of the m-bit information words.

14. (Original) The method of claim 5, wherein at least one of the n-bit code words in one of the q coding states is associated with p of the m-bit information words.

15. (Original) The method of claim 1, wherein the n-bit code words are divided into p coding states of the first kind and q coding states of the second kind, where p and q are integers greater than or equal to 1, and each of the p and q coding states have n-bit code words different from the n-bit code words in the other p and q coding states.

16. (Original) The method of claim 15, wherein p+q equals 5.

17. (Original) The method of claim 15, wherein p+q equals 13.

18. (Original) The method of claim 15, wherein at least one of the n-bit code words in one of the p coding states is associated with p+q of the m-bit information words.

19. (Original) The method of claim 18, wherein at least one of the n-bit code words in one of the q coding states is associated with p of the m-bit information words.

20. (Original) The method of claim 15, wherein at least one of the n-bit code words in one of the q coding states is associated with p of the m-bit information words.

21. (Canceled)

22. (Original) The method of claim 1, wherein the n-bit code words of the first type end in zero, and the n-bit code words of the second type end in one.

23. (Original) The method of claim 1, wherein the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

24. (Original) The method of claim 1, wherein the converting step converts at a coding rate of m/n, which is greater than 2/3.

25. (Original) The method of claim 24, wherein n is equal one of 13, 16, and 19.

26. (Original) The method of claim 24, wherein m is equal to one of 9, 11, and 13.

27. (Original) The method of claim 1, further comprising:

generating a modulated signal from the n-bit code words.

28. (Original) The method of claim 27, further comprising:

recording the modulated signal in a recording medium.

29. (Original) The method of claim 27, further comprising:

transmitting the modulated signal.

30. (Original) The method of claim 1, wherein the converting step converts the m-bit information words into the n-bit code words using a translation table.

31. (Canceled)

32. (Previously Presented) A method of converting, comprising:

receiving m-bit information words, where m is an integer;

converting the m-bit information words into n-bit code words that satisfy a dk-constraint, where n is an integer greater than m, d indicates a minimum number of zeros between consecutive ones in the n-bit code words and k indicates a maximum number of zeros between consecutive ones in the n-bit code words,

the n-bit code words being divided into a first type and a second type and into coding states of a first kind and a second kind ,

wherein an m-bit information word is converted into an n-bit code word of the first or the second kind if the previous m-bit information word was converted into an n-bit code word of the first type, and

an m-bit information word is converted into an n-bit code word of the first kind if the previous m-bit information word was converted into an n-bit code word of the second type,

wherein the n-bit code words of the first type end in zero, and the n-bit code words of the second type end in one,

the n-bit code words in a coding state of the first kind starting with zero and the n-bit code words in a coding state of the second kind starting with zero or one, and

the n-bit code words being divided into p coding states of the first kind and q coding states of the second kind,

where p and q are integers greater than or equal to 1, and each of the p and q coding states have n-bit code words different from the n-bit code words in the other p and q coding states,

wherein a minimum number of zeros (d) between consecutive ones in the n-bit code words is one zero, and

wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

33. (Previously Presented) A coding device, comprising:

a converter receiving m-bit information words, where m is an integer and converting the m-bit information words into n-bit code words, where n is an integer greater than m,

the n-bit code words being divided into a first type and a second type and into coding states of a first kind and a second kind ,

wherein an m-bit information word is converted into an n-bit code word of the first or the second kind if the previous m-bit information word was converted into an n-bit code word of the first type, and

an m-bit information word is converted into an n-bit code word of the first kind if the previous m-bit information word was converted into an n-bit code word of the second type,

wherein a minimum number of zeros (d) between consecutive ones in the n-bit code words is one zero, and

wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

34. (Original) The coding device of claim 33, wherein the converter receives a coding state with each m-bit information word and converts the m-bit information word into the n-bit code word based on the coding state.

35. (Original) The coding device of claim 34, further comprising:

a buffer supplying the coding state to the converter; and wherein

the converter determines the coding state for the next m-bit information word as part of the converting process, and stores the determined coding state in the buffer.

36. (Original) The coding device of claim 35, wherein the converter converts the m-bit information word into the n-bit code word and determines the coding state using a translation table.

37. (Original) The coding device of claim 33, further comprising:

a modulator generating a modulated signal from the n-bit code words.

38. (Original) The coding device of claim 37, further comprising:

a recording device recording the modulated signal in a recording medium.

39. (Original) The coding device of claim 37, further comprising:

a transmitter transmitting the modulated signal.

40. (Previously Presented) A method of manufacturing a recording medium, comprising:

converting m-bit information words into n-bit code words, where n is an integer greater than m,

the n-bit code words being divided into a first type and a second type and into coding states of a first kind and a second kind ,

wherein an m-bit information word is converted into an n-bit code word of the first or the second kind if the previous m-bit information word was converted into an n-bit code word of the first type, and

an m-bit information word is converted into an n-bit code word of the first kind if the previous m-bit information word was converted into an n-bit code word of the second type;

generating a modulated signal from the n-bit code words; and

recording the modulated signal in a recording medium,

wherein a minimum number of zeros (d) between consecutive ones in the n-bit code words is one zero, and

wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

41. (Previously Presented) A recording medium having a modulated signal recorded in a track, the modulated signal including signal portions representing n-bit code words,

where n is an integer, each n-bit code word representing an m-bit information word, where m is an integer less than n,

the n-bit code words being divided into a first type and a second type and into coding states of a first kind and a second kind ,

wherein an m-bit information word is represented by an n-bit code word of the first or the second kind if the previous m-bit information word is represented by an n-bit code word of the first type, and

an m-bit information is represented by an n-bit code word of the first kind if the previous m-bit information word is represented by an n-bit code word of the second type,

wherein a minimum number of zeros (d) between consecutive ones in the n-bit code words is one zero, and

wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

42. (Original) The recording medium of claim 41, wherein the signal portions represent the n-bit code words such that each successive n-bit code word partially instructs a reproducing device on which of at least two m-bit information words are represented by each previous n-bit code word.

43. (Previously Presented) A modulated signal, comprising:

signal portions representing n-bit code words, where n is an integer, each n-bit code word representing an m-bit information word, where m is an integer less than n,

the n-bit code words being divided into a first type and a second type and into coding states of a first kind and a second kind ,

wherein an m-bit information word is represented by an n-bit code word of the first or the second kind if the previous m-bit information word is represented by an n-bit code word of the first type, and

an m-bit information word is represented by an n-bit code word of the first kind if the previous m-bit information word is represented by an n-bit code word of the second type,

wherein a minimum number of zeros (d) between consecutive ones in the n-bit code words is one zero, and

wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

44. (Original) The modulated signal of claim 43, wherein the signal portions represent the n-bit code words such that each successive n-bit code word partially instructs a reproducing device on which of at least two m-bit information words are represented by each previous n-bit code word.

45. (Previously Presented) A method of decoding, comprising:

receiving n-bit code words, where n is an integer;

converting the n-bit code words into m-bit information words, where m is an integer less than n, the n-bit code words being divided into a first type and a second type and into coding states of a first kind and a second kind ,

wherein an m-bit information word is represented by an n-bit code word of the first or the second kind if the previous n-bit code word is of the first type, and

wherein is represented by an n-bit code word of the first kind if the previous n-bit code word is of the second type,

wherein a minimum number of zeros (d) between consecutive ones in the n-bit code words is one zero, and

wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

46. (Original) The method of claim 45, wherein the n-bit code words are divided into p coding states of the first kind and q coding states of the second kind, where p and q are integers greater than or equal to 1, and each of the p and q coding states have n-bit code words different from the n-bit code words in the other p and q coding states.

47. (Original) The method of claim 46, wherein the converting step determines to which of the p and q coding states a next n-bit code word belongs, and converts a current n-bit code word into an m-bit information word based on the determined coding state.

48. (Original) The method of claim 47, wherein at least one of the p and q coding states includes more than one of a same n-bit code word, the same n-bit code word maps to more than one of the m-bit information words, and each same n-bit code word has a different state direction associated therewith, each state direction indicating a next one of the p and q coding states from which to obtain the next n-bit code word when converting the m-bit information words into the n-bit code words.

49. (Original) The method of claim 48, wherein the n-bit code words satisfy a dk-constraint, where d indicates a minimum number of zeros between consecutive ones in the n-

bit code words and k indicates a maximum number of zeros between consecutive ones in the n-bit code words.

50. (Original) The method of claim 49, wherein m/n is greater than 2/3, and $d = \bar{1}$.

51. (Original) The method of claim 50, wherein p+q equals 5.

52. (Original) The method of claim 50, wherein p+q equals 13.

53. (Original) The method of claim 49, wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

54. (Original) The method of claim 45, further comprising:

receiving a modulated signal; and

demodulating the modulated signal into at least the n-bit code words.

55. (Original) The method of claim 45, further comprising:

reproducing a modulated signal from a recording medium; and

demodulating the modulated signal into at least the n-bit code words.

56. (Previously Presented) A method of decoding, comprising:

receiving n-bit code words, where n is an integer;

determining a coding state of next n-bit code words; and

converting a current n-bit code word into an m-bit information word, where m is an integer less than n, based on the determined coding state

wherein each of the n-bit code words belongs to a coding state, at least one of the coding states includes more than one of a same n-bit code word, the same n-bit code words map to more than one of the m-bit information words, and each of the same n-bit code words has a different state direction associated therewith, each of the state directions indicating a next one of the coding states from which to obtain the next n-bit code word when converting the m-bit information words into the n-bit code words,

wherein a minimum number of zeros (d) between consecutive ones in the n-bit code words is one zero, and

wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

57. (Canceled)

58. (Original) The method of claim 56, further comprising:

receiving a modulated signal; and

demodulating the modulated signal into at least the n-bit code words.

59. (Original) The method of claim 56, further comprising:

reproducing a modulated signal from a recording medium; and

demodulating the modulated signal into at least the n-bit code words.

60. (Previously Presented) A decoding device, comprising:

a converter receiving n-bit code words, where n is an integer, and converting the n-bit code words into m-bit information words, where m is an integer less than n,

the n-bit code words being divided into a first type and a second type and into coding states of a first kind and a second kind ,

wherein an m-bit information word is represented by an n-bit code word of the first or the second kind if the previous n-bit code word is of the first type, and

an m-bit information word is represented by an n-bit code word of the first kind if the previous n-bit code word is of the second type,

wherein a minimum number of zeros (d) between consecutive ones in the n-bit code words is one zero, and

wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

61. (Original) The decoding device of claim 60, wherein the n-bit code words are divided into p coding states of the first kind and q coding states of the second kind, where p

and q are integers greater than or equal to 1, and each of the p and q coding states have n-bit code words different from the n-bit code words in the other p and q coding states.

62. (Original) The decoding device of claim 61, wherein the converter determines to which of the p and q coding states a next n-bit code word belongs, and converts a current n-bit code word into an m-bit information word based on the determined coding state.

63. (Original) The decoding device of claim 62, wherein at least one of the p and q coding states includes more than one of a same n-bit code word, the same n-bit code word maps to more than one of the m-bit information words, and each same n-bit code word has a different state direction associated therewith, each state direction indicating a next one of the p and q coding states from which to obtain the next n-bit code word when converting the m-bit information words into the n-bit code words.

64. (Original) The decoding device of claim 63, wherein the n-bit code words satisfy a dk-constraint, where d indicates a minimum number of zeros between consecutive ones in the n-bit code words and k indicates a maximum number of zeros between consecutive ones in the n-bit code words.

65. (Original) The decoding device of claim 64, wherein m/n is greater than 2/3, and d = 1.

66. (Original) The decoding device of claim 65, wherein p+q equals 5.

67. (Original) The decoding device of claim 65, wherein p+q equals 13.

68. (Original) The decoding device of claim 64, wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

69. (Original) The decoding device of claim 60, further comprising:

a demodulator receiving a modulated signal and demodulating the modulated signal into at least the n-bit code words.

70. (Original) The decoding device of claim 60, further comprising:

a reproducing device reproducing a modulated signal from a recording medium, and demodulating the modulated signal into at least the n-bit code words.

71. (Previously Presented) A decoding device, comprising:

a first translator receiving next n-bit code words, where n is an integer, and determining a coding state of the next n-bit code words;

a second translator receiving a current n-bit code word and the determined coding state, and converting the current n-bit code word into an m-bit information word, where m is an integer less than n, based on the determined coding state

wherein each of the n-bit code words belongs to a coding state, at least one of the coding states includes more than one of a same n-bit code word, the same n-bit code words map to more than one of the m-bit information words, and each one of the same n-bit code words has a different state direction associated therewith, each of the state directions indicating a next one of the coding states from which to obtain the next n-bit code word when converting the m-bit information words into the n-bit code words,

wherein a minimum number of zeros (d) between consecutive ones in the n-bit code words is one zero, and

wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

72. (Canceled)

73. (Original) The decoding device of claim 71, further comprising:

a demodulator receiving a modulated signal and demodulating the modulated signal into at least the n-bit code words.

74. (Original) The decoding device of claim 71, further comprising:

a reproducing device reproducing a modulated signal from a recording medium, and demodulating the modulated signal into at least the n-bit code words.